

III-Vs **REVIEW**

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Finding the road ahead

If As the end of the millennium rapidly approaches, the compound semiconductor industry can look back at the closing years of the 20th century with a great deal of pride and satisfaction. A series of considerable technical advances have enabled the sector to grow into a dynamic and progressive industry.

Ensuring this success continues well into the new century, however, will remain a major challenge to everyone involved with compound semiconductors. As the industry continues to mature, competition will continue to increase both within the industry and from replacement technologies external to it. In the face of this competition it may well be, almost paradoxically, that cooperation will be the key. Certainly, the benefits of co-operation are at the forefront of the growing calls for an international 'roadmap' to prepare the industry for the challenges of the next century.

Among the leading proponents of a roadmap is Herbert S. Bennett of the Semiconductor Electronics Division of the US Government funded National Institute of Standards and Technology (see www.eeel.nist.gov/812/itrcs.html). Bennett believes a roadmap would convey a number of benefits, including the ability of compound semiconductor companies to make better use of their investment capital and to develop a clearer understanding of competing technologies.

Bennett points to the success of the Si CMOS roadmaps, particularly when viewed alongside initial expectations of

their effectiveness, to illustrate his view. As Bennett points out, many technology barriers, once thought to be of concern to a few companies, were found to be common throughout the Si industry.

Bennett believes for a technology roadmap to be a success it needs to be both international and industry led. He believes the first steps in its development are an assessment of the applications most amenable to such an approach and the identification of the organizations willing to sponsor and maintain it. This would be followed by an economic assessment of the benefits and costs associated with developing roadmaps.

With the road ahead sure to become more crowded and difficult to navigate, Bennett's ideas are worthy of close consideration.



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